REMARKS

The present application was filed on May 15, 2006 with claims 1 through 34. Claims 1 through 34 are presently pending in the above-identified patent application.

In the Office Action, the Examiner rejected claims 1-7, 10-16 and 21-34 under 35 U.S.C. §103(a) as being unpatentable over Li et al. (United States Publication No. 2004/0022174) in view of Sandell (United States Publication No. 2004/0131011), rejected claims 8, 17, 18 and 20 under 35 U.S.C. §103(a) as being unpatentable over Li et al. in view of Sandell and further in view of Joo (United States Publication No. 2004/0208253), and rejected claims 9 and 19 under 35 U.S.C. §103(a) as being unpatentable over Li et al. in view of Sandell and further in view of well know prior art (MPEP 2144.03).

Independent claims 1, 17, 21, 26, 29, 31 and 33

Independent claims 1, 21, 26, 29, 31 and 33 were rejected under 35 U.S.C. §103(a) as being unpatentable over Li et al. in view of Sandell, and independent claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Li et al. in view of Sandell and further in view of Joo. Regarding claim 1, the Examiner asserts that Li discloses diagonally loading subcarriers from said one or more symbols (paragraphs 46 and 4; and FIGS. 1-4).

Applicants note that, in the text cited by the Examiner, Li teaches:

> [0046] Thus, as shown in FIG. 3A, the first transmitter transmits symbols during the short-training period 310 in accordance with the IEEE 5 GHz standard. Once the short-training symbols have been transmitted, long-training symbols X 355a and X 365a are transmitted during the long-training period 320. Here, the capital symbol X denotes a set of the frequency domain quantities in an orthogonal frequency division multiplexing (OFDM) system. Thus, X can be viewed as a vector containing N elements, where N is the number of sub-carriers in the OFDM system. Each element X(k) of X is carried by its corresponding kth sub-carrier. It should be appreciated that X is inverse Fourier transformed to a time domain signal, added with a cyclic prefix, and converted to a radio-frequency (RF) analog signal by an RF module prior to being radiated from a transmit antenna.

Li teaches the transmission of short-training symbols and long-training symbols; Li makes *no* reference to diagonal loading. Furthermore, paragraph [0041] of Sandell is directed to *a diagonal channel matrix to estimate a channel impulse response;* Sandell does *not* disclose or suggest *diagonally loading subcarriers*. Independent claims 1 and 21 require *diagonally loading subcarriers from said one or more symbols across a plurality of antennas* in said multiple antenna wireless communication system. Independent claim 17 requires *diagonally*

loading subcarriers from a single-antenna long training symbol across long training symbols associated with logically adjacent antennas in said multiple antenna wireless communication system; nulling subcarriers in said plurality of long training symbols that are not diagonally loaded: and inserting at least one additional subcarrier to ensure that a nulled subcarrier has at least one subcarrier located on each side of said nulled subcarrier. Independent claims 26 and 29 require transmitting subcarriers from said one or more symbols using a plurality of antennas in said multiple antenna wireless communication system *such that each of said subcarriers are active on only one of said plurality of antennas at a given time*. Independent claims 31 and 33 require aggregating subcarriers from said one or more symbols that were transmitted such that *each of said subcarriers are active on only one of said plurality of antennas at a given time*.

Thus, Li et al., Sandell, and Joo, alone or in combination, do not disclose or suggest diagonally loading subcarriers from said one or more symbols across a plurality of antennas in said multiple antenna wireless communication system, as required by independent claims 1 and 21, do not disclose or suggest diagonally loading subcarriers from a single-antenna long training symbol across long training symbols associated with logically adjacent antennas in said multiple antenna wireless communication system; nulling subcarriers in said plurality of long training symbols that are not diagonally loaded; and inserting at least one additional subcarrier to ensure that a nulled subcarrier has at least one subcarrier located on each side of said nulled subcarrier, as required by independent claim 17, do not disclose or suggest transmitting subcarriers from said one or more symbols using a plurality of antennas in said multiple antenna wireless communication system such that each of said subcarriers are active on only one of said plurality of antennas at a given time, as required by independent claims 26 and 29, and do not disclose or suggest aggregating subcarriers from said one or more symbols that were transmitted such that each of said subcarriers are active on only one of said plurality of antennas at a given time, as required by independent claims 31 and 33.

Dependent Claims 2-16, 18-20, 22-25, 27-28, 30, 32 and 34

Claims 2-16, 18-20, 22-25, 27-28, 30, 32 and 34 are dependent on independent claims 1, 21, 26, 29, 31 and 33, and are therefore patentably distinguished over Li et al., Sandell, and Joo, alone or in combination, because of their dependency from independent claims 1, 17, 21, 26, 29, 31 and 33 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

Conclusion

All of the pending claims, i.e., claims 1-34, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

Date: October 22, 2009

Kevin M. Mason
Attorney for Applicants
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560